ABSTRACT

According to a method of generating check matrixes for LDPC codes according to the present invention, a check matrix generating apparatus executes: a step of determining a code length, coding rate, and Euclidean geometry codes, rearranging the codes to create a basic matrix, and selecting a maximum value of column weight; a step of searching an ensemble of row and column weights in a state that row weights are limited to continuous two kinds, and determining an optimum set of row weights; a step of deleting rows in order from the bottom of the basic matrix; a step of searching an ensemble of row and column weights with the set of row weights used as fixed parameters, and determining an optimum set of column weights; a step of searching an optimal ensemble of row and column weights using optimization, with the set of row weights used as fixed parameters; and a step of dividing the row and column weights of the basic matrix after deleting the rows at random based on the optimal ensemble.